WHAT IS CLAIMED IS:

1. A stored data element format representing a portion of an image, said stored data element comprising:

    a multi-bit alpha component field that may or may not be present in a particular instance of said format; and

    a portion encoding at least one color component, said portion having a first length if said multi-bit alpha component field is present and having a second length greater than said first length if said multi-bit alpha component field is not present.

2. A stored data element format as in claim 1 further including a flag that indicates whether said multi-bit alpha component field is present in a particular instance of said format.

3. A texture map including:

    a first texel encoded with a semi-transparency value and having first color resolution; and

    a second texel encoded without any semi-transparency value and having second color resolution greater than said first color resolution.

4. A texture map as in claim 3 wherein said first and second texels each further include a flag indicating whether said texel is encoded with a multi-bit semi-transparency value.

5. A computer graphics system including a storage device storing plural data elements corresponding to color image elements, said data elements each

3   including color information and an indicator field indicating whether or not said

4   data element provides a further, multi-bit field encoding semi-transparency.

1   6. A system as in claim 5 wherein said indicator field comprises a single bit

2   flag.

1   7. A system as in claim 5 wherein ones of said plural data elements that do

2   not encode semi-transparency use the space otherwise occupied by said multi-bit

3   field to encode said color information at higher resolution.

1   8. A system as in claim 5 wherein said color information encodes each of

2   the three primary colors.

1   9. A system as in claim 5 wherein each said data element has a 16-bit

2   length, and said indicator field comprises a single bit.

1   10. A system as in claim 5 wherein said multi-bit field consists of three bits.

1   11. A system as in claim 5 further including a data converter coupled to

2   said storage device, said data converter converting between said multi-bit semi-

3   transparency encoding and higher resolution alpha information.

1   12. A system as in claim 11 wherein said data converter quantizes or

2   dequantizes said higher resolution alpha information in equal steps.

1   13. A system as in claim 11 wherein said data converter quantizes or

2   dequantizes said higher resolution alpha information in eight equal steps.

1   14. A color image element encoding format comprising:

2   an indicator field indicating whether an instance of said format is capable of

3 encoding semi-transparency; and

4   at least one variable sized field encoding further information concerning

5 said color image element, said at least one variable sized field having a first length

6 if said indicator field indicates said format instance is incapable of encoding semi-

7 transparency, said at least one variable sized field having a second length less than

8 said first length if said indicator field indicates said format instance is capable of

9 encoding semi-transparency.

1   15. A color image element encoding format as in claim 14 wherein said

2 variable sized field encodes color information.

1   16. A color image element encoding format as in claim 14 wherein said

2 format includes a multi-bit alpha field if said indicator field indicates said format

3 instance is capable of encoding semi-transparency.

1   17. A color image element as in claim 14 wherein said color image element

2 encoding format encodes texels.

1   18. A method of encoding an image element comprising:

2   (a) specifying whether said image element will encode semi-transparency;

3   (b) if said specifying step specifies that said image element will encode

4 semi-transparency, allocating a set of plural bits within an encoding format to

5 encode alpha; and

6   (c) if said specifying step specifies that said image element will not encode

7   semi-transparency, allocating said set of plural bits to encode another

8   characteristic of said image element.

1   19. A method as in claim 18 wherein said image element comprises a texel.

1   20. A method as in claim 18 wherein said step (c) comprises encoding color

2   of said image element at higher resolution through use of said set of plural bits.

1   21. An alpha component converter that converts between first and second

2   resolutions of semi-transparency information, said converter quantizing or

3   dequantizing first resolution semi-transparency information into a predetermined

4   number of equal sized steps to form second resolution semi-transparency

5   information.

1   22. The alpha component converter of claim 21 wherein the number of

2   equal sized steps is eight.

1   23. A method of generating a cutout image within a 3D graphics system

2   having a 3D graphics pipeline that generates images based on polygons, said

3   graphics pipeline including a texture mapping unit storing a texture map including

4   a first set of semi-transparent colored texels, and a second set of opaque, colored

5   texels, said method comprising:

6   encoding each of said texels in a variable bit encoding format wherein a

7   predetermined bit field within said format is allocated to encode semi-transparency

8   of said first set of texels, and said predetermined bit field is allocated to encode

9   coloration of said second set of texels;

10   applying said texel encoding as a matte to a polygon using at least one alpha

11   operation, to generate a set of image elements; and

12   anti-aliasing said image elements.